



Contribution ID: 154

Type: **Poster**

Morphology of fullerene-free bulk heterojunction blends for photovoltaic applications

Wednesday, 9 December 2020 17:40 (20 minutes)

Over the last decades, the focus of research has been shifted towards the field of organic electronics due to their advantageous properties, such as low-cost manufacturing processes, versatility, flexibility, as well as their tunable characteristics, such as absorption and solubility. These properties open up a wide range of applications, especially, in the field of photovoltaics. Hence, organic photovoltaics represent a promising alternative for the conventional inorganic photovoltaics. Even though the power conversion efficiency is lower than the ones of conventional devices, values of over 16% have been reported and thus receive industrial attention for commercialization. We study the inner morphology of a low band gap, fullerene-free bulk heterojunction blend, namely PBDB-T and ITIC of different compositions with grazing-incidence small-angle X-ray scattering (GISAXS). The obtained structural information is correlated with current density voltage characteristics and the absorbance of the active layer in order to improve the efficiency.

Primary authors: GROTT, Sebastian (TU München, Physik-Department, Lehrstuhl für Funktionelle Materialien); BIESSMANN, Lorenz (TU München, Physik-Department E13); SAXENA, Nitin (Technische Universität München, Lehrstuhl für Funktionelle Materialien); CAO, Wei (TU München); BERNSTORFF, Sigrid (Elettra Sincrotrone Trieste S. C. p. A.); MÜLLER-BUSCHBAUM, Peter (TU München, Physik-Department, LS Funktionelle Materialien)

Presenter: GROTT, Sebastian (TU München, Physik-Department, Lehrstuhl für Funktionelle Materialien)

Session Classification: Joint poster session of MLZ User Meeting and DN2020

Track Classification: DN: Soft Matter